

## CLAIMS

What I claim is -

(1)

a manipulative puzzle

which comprises a first member and a second member pivoted for rotation in relation to said first about an axis,

which comprises a sequence of projectional units in line longitudinally of said axis, each unit engaged to one of said members for rotation relative to the other one of said members about said axis,

which comprises a releaseable fastening device holding said members mutually engaged longitudinally of said axis,

which comprises a set of annular elements, each element defining a bore and defining a keyway at the periphery of the bore,

and which displays a form

in which said elements are coaxially pinned for rotation about said axis,

in which certain rotations of said second member relative to said first permit respective rotations of an exclusive lot of said elements, the make-up of which lot is variable by movements of said elements longitudinally of said axis in relation to said members,

and by which, through a placement of said keyway, said members may be withdrawn from said bore,

whereas even upon the deconstruction of said form by the withdrawal of said members from said bore, said fastening device confines each of said members at each end of said sequence to a rotatable position in relation to the other member at a controlled distance from said axis and thereby said units of said sequence are rotationally engaged.

(2)

a manipulative puzzle as set forth in claim 1

wherein said sequence of projectional units produces two rows of similar barriers running parallel to said axis, each barrier protruding away from said axis,

whereas the barriers in a first row are engaged to said first member for simultaneous rotation therewith relative to said second member,

whereas the barriers in the other row are engaged to said second member for simultaneous rotation therewith relative to said first member,

whereas in order longitudinally of said axis said sequence of projectional units includes a first part in which each unit contributes a barrier to said first row, a second part in which each unit contributes a barrier to said second row, a third part in which each unit contributes a barrier to said first row and a fourth part in which each unit contributes a barrier to said second row,

whereas said projectional units are mounted on a common molded plastic spindle,

whereas depending upon the state of said fastening device said spindle may be withdrawn to facilitate variation in the composition of said rows,

whereas said spindle incorporates at one of its ends a resilient bent portion deflecting the run of the spindle away from said axis for a short distance terminating at a catch part,

and whereas variations in the state of said fastening device may be produced by movements at said bent portion of said spindle, there being one state thereby achievable through the application of manipulative force wherein said catch part may be passed over said bent portion and thereby said members may be disjoined.

(3)

a manipulative puzzle as set forth in claim 2

which comprises a handle detachably joined to said first member, said handle mounting a device to facilitate the application of force to said bent portion of said spindle whereby said members may be disjoined.

(4)

a manipulative puzzle as set forth in claim 2

which comprises a sem-tubular limiter, said limiter pinning said elements on an equable arbor and, given said form, said limiter being engaged with said second member for simultaneous rotation therewith relative to said first member, whereas said limiter mounts an exterior wall delimiting a storage space at one end of said arbor,

whereas depending on the deconstruction of said form by the withdrawal of said members from said bore, said limiter permits the unpinning of said elements through the application of controlled manipulative forces , thereby providing a way of manipulative access to the contents if any of said storage space, and whereas said exterior wall, curving around said axis, is adapted to function as a handle whereby said second member may be rotationally controlled.

(5)

a manipulative puzzle as set forth in claim 4

together with an object releaseably held in said storage space, as means for the playing of a game wherein the release of said object via the deconstruction of said form is one player's partial aim.

(6)

a manipulative puzzle as set forth in claim 4

wherein said elements are a number of congruent elements

wherein said exterior wall includes a detachable portion belonging to a spacer,

whereas said spacer defines a closure for said storage space and reduces the number of said elements which may be accommodated on said arbor,

and whereas after the deconstruction of said form and the unpinning of said elements, said spacer may be detached and said form may be reconstructed with increase of said number, additional elements then replacing said spacer on said arbor.

(7)

a manipulative puzzle as set forth in claim 1

together with marks of representation confined longitudinally of said axis in relation to each other,

said marks forming indicia as a sequence in order longitudinally of said axis and said marks being equal in number to said elements so that each mark corresponds to one of said elements according to that element's ordinal position longitudinal of said axis,

said marks serving to facilitate a reference to said elements independent of the elements' own colouring and indicia,

whereas said elements' relative order longitudinally of said axis may be varied after the deconstruction of said form.

(8)

a manipulative puzzle

which comprises a first member and a second member pivoted for rotation in relation to said first about an axis,

which comprises a sequence of projectional units in line longitudinally of said axis, each unit engaged to one of said members for rotation relative to the other one of said members about said axis,

which comprises a set of annular elements, each element defining a bore and defining a keyway at the periphery of the bore,

which comprises a housing, said housing defining a storage space,

which comprises an object releaseably held in said storage space,

and which displays a form

in which said elements are coaxially pinned for rotation about said axis,

in which certain rotations of said second member relative to said first permit respective rotations of an exclusive lot of said elements, the make-up of which lot is variable by movements of said elements longitudinally of said axis in relation to said members,

in which said sequence of projectional units produces two rows of barriers running parallel to said axis, each barrier protruding away from said axis,

and by which, through a placement of said keyway, said members may be withdrawn from said bore,

whereas the barriers in a first one of said rows are engaged to said first member for simultaneous rotation therewith relative to said second member,

whereas the barriers in the other one of said rows are engaged to said second member for simultaneous rotation therewith relative to said first member,

whereas upon the deconstruction of said form by the withdrawal of said members from said bore, said housing may be opened to permit access to said storage space and to permit the release of said object from said storage space,

whereas said object is not required for the construction of said form so that after its release from said storage space said form may be reconstructed without the presence of said object in said storage space,

whereas the release of said object from said storage space may be achieved without changing the distribution of said barriers among said rows, and whereas, given the distribution of said barriers among said rows, the mechanical constraints applying in said form to the manipulation of said elements are the same whether or not said object is held in said storage space, whereby the release of said object from said storage space may function as an optional incentive to the deconstruction of said form.

(9)

a manipulative puzzle as set forth in claim 8 wherein the distribution of said barriers among said rows may be varied by the manipulative reconstruction of said form, whereby the mechanical constraints applying in said form to the manipulation of said elements may be changed.

(10)

a manipulative puzzle as set forth in claim 9 which comprises a semi-tubular limiter, whereas said housing is confined to a fixed position longitudinally of said axis in relation to said limiter, whereas given said form said limiter extends through said bore, pins said elements and rotatably mounts each element, and whereas the release of said object from said storage space depends upon the demounting of one of said elements from said limiter.

(11)

a manipulative puzzle as set forth in claim 10 whereas said limiter comprises a resilient wall and a lip attached to said wall whereby, given said form, said elements are pinned,

and whereas depending on the deconstruction of said form by the withdrawal of said members from said bore, said wall may be temporarily bent to permit one of said elements to pass over said lip and thereby to permit said one element to be demounted from said limiter.

(12)

a manipulative puzzle as set forth in claim 9

which comprises a spindle,

wherein said first member, longitudinally of said axis, extends further at one end of said sequence than said second member, incorporating at said one end a handle whereby said first member may be rotationally controlled,

wherein each of said projectional units defines an axial orifice,

whereas given said form said spindle extends through said orifice,

whereas given said form said spindle extends the length of said sequence and incorporates, at the end of said sequence opposite said one end, a bead preventing movement of said spindle longitudinal of said axis in relation to said members,

and whereas, depending on the deconstruction of said form by the withdrawal of said members from said bore, said spindle may be withdrawn from said orifice by movement thereof longitudinal of said axis away from said one end.

(13)

a manipulative puzzle as set forth in claim 12

which comprises a releaseable fastening device holding said members mutually engaged longitudinally of said axis,

whereas proximate said bead said spindle incorporates a resilient bent portion deflecting the run of the spindle away from said axis for a short distance terminating at a catch part of said second member,

and whereas variations in the state of said fastening device may be produced by movements at said bent portion of said spindle, there being one state thereby achievable through the application of manipulative force wherein said catch part may passed over said bent portion and thereby said members may be disjoined.

(14)

a manipulative puzzle as set forth in claim 13  
which comprises a semi-tubular limiter,  
whereas said housing is rotationally engaged to said limiter,  
whereas given said form said limiter extends through said bore, pins said elements and rotatably mounts each element,  
whereas said second member defines a groove,  
and whereas, given said form, said limiter incorporates a ridge slidably located in said groove whereby said second member may be rotated through the application of torque between said housing and said handle.

(15)

a method of playing a game,  
wherein a first player challenges a second player to solve a mechanical puzzle by assembling the puzzle from components and determining a rotational constraint in the puzzle from a plurality of possible specifications,  
wherein said constraint is applied to a plurality of coaxial annular elements by means of a sequence of projectional units, including a first unit engaged to a handle and a second unit engaged to a housing,  
wherein said housing defines a storage space and said first player secures in said storage space, when assembling said puzzle, an object not required as a component of said puzzle,

wherein a subsequent release of said object may function as an aim for said second player incorporating the aim of solving said puzzle,  
and wherein said second player, in solving said puzzle, rotates said handle in relation to said housing about an axis and moves said handle longitudinally of said axis in relation to said housing,  
whereas a randomisation of said puzzle mechanically locks said housing.

(16)

a method of playing a game as set forth in claim 15  
wherein said object is a coin.